

Comparison of Couple Intimacy, Perceived Social Support and Sexual Performance in Women with High and Low Menopausal Symptoms

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Abstract

Introduction: Menopause typically occurs between the ages of 45 years and 56 years. During the menopausal transition, approximately 50% to 75% of women have hot flashes, night sweats, or both (vasomotor symptoms) and more than 50% have genitourinary symptoms. This study aimed at comparing intimacy, perceived social support and sexual function in women who experience high and low menopause symptoms.

Method: The present study was conducted by using a causal-comparative research design. For this purpose, 150 participants of the menopausal women living in Ardabil in 2022 were recruited using a convenience sampling method. Participants whose score was one standard deviation higher and lower than the average of menopausal symptoms severity questionnaire were selected as the group with high and low severity of menopausal symptoms. They had referred to health centers and answered the Intimacy scale, Multidimensional Social Perception, Women Sexual Function (FSFI) and Severity of Menopausal Symptoms Questionnaires. Data were analyzed by Multivariate analysis of Variance and SPSS version 23 and a two tailed 5% level of significance.

Results: Findings revealed that women experiencing high and low signs of menopause have a significant difference in intimacy, perceived support and sexual function ($p < 0.05$). According to results, it seems that the quality of marital relationships and interactions of menopausal women is one of the factors affecting the experience of menopausal symptoms ($p < 0.05$).

Conclusion: It can be concluded that women who experienced fewer menopausal symptoms, had better intimate relationships, more perceived social support, and better sexual function. Furthermore, more intimate relationships, higher perceived support, and better sexual function may be associated with less menopausal symptoms.

Keywords: Spouses, Menopause, Social Support, Sexual Function

Introduction

One of the most critical stages in a woman's life in middle age is menopause and due to physical and mental changes, it constitutes a complex phase of women's lives [1]. According to the World Health Organization (WHO), natural menopause is defined as the end of menstruation in women due to the cessation of ovarian follicular activity, signaling the end of a woman's reproductive years [2]. A woman is considered menopausal if she has not had a period for 12 consecutive months, not related to pregnancy, breastfeeding, or other hormonal issues. Menopause typically occurs in women over the age of 50 and is marked by a decrease in estrogen levels because the ovaries stop producing significant amounts of this hormone. This reduction in estrogen leads to various symptoms and health concerns that are increasingly significant for women's health. The menopausal transition can lower women's quality of life and weaken their sense of well-being due to its physical, psychological, and physiological symptoms [3] This natural process of menopause is related

to physiologic changes in the hypothalamic–pituitary–ovarian axis whereby ovarian depletion, decreases in estrogen and progesterone production [3]. This period of endocrine changes that can result in Vasomotor Symptoms (VMS) of menopause [4] can negatively affect quality of life [5] and cause nocturnal awakenings that result in poor sleep (for example, hot flashes, night sweats) [6], psychological symptoms (mood changes) [7], anxiety [8], depression [9], skeletal-muscular pains (bone and joint pain), [10] difficulty in sleeping and genitourinary symptoms (vaginal dryness, dyspareunia, frequency and period Menopause varies significantly urgency of urination) [11].

Prevalence and symptoms of menopause duration usually occur at the range of 9.10% to 45.2%. [12]

Although there are many cultural and psychological factors that have a completely natural nature, menopause is a biological phenomenon. It can be stated that women's attitude has a decisive role in reaction towards Menopause Transition (MT). Sub-threshold responses as the fear of losing fertility and femininity and husband's perception about wife's menopause, forms the way women face and adapt to the changes caused by menopause [13]. Intimacy in relationships positively affects women's attitudes and experiences during menopause. Intimacy, which stems from the need for attachment, involves the desire for physical closeness, bonding, and contact with others. Research shows that marital quality improves during midlife, with couples experiencing less conflict and more enjoyment in parenting. Emotional support and marital intimacy play a crucial role in the health of menopausal women. The closer the relationship with a spouse, the lower the levels of social isolation, cognitive problems, physical symptoms, depression, and severity of menopausal symptoms [14, 15]. Negative relationship experiences, such as intimate partner violence or childhood abuse, are strongly linked to more severe menopausal symptoms [16]. Therefore, marital intimacy during midlife can reduce the severity of menopausal symptoms.

Social support is the sense of having people who care about us and can be relied upon for help and companionship in times of need. This support improves well-being and has a significant positive impact on overall health [17]. Perceived support is a measure of how appraising statuses about his/her situation, while received support is a reflecting support quantity he/she receives so, perception and reception of social support should be assessed independently [18]. Social support includes both practical and emotional supports that are provided by individual's family, friends, or significant others, to convey better feeling in their marital relations [17]. Its positive emotional form leads to better adaptation facing psychological stress by the prevention of its remembrance, and has a close relationship with establishing positive interactions. Social support, in addition to dealing with mental pressure, is also useful in times of calm and moderates the damage caused by crises and upcoming changes [18]. Results suggest that spouses who are more friendly, cooperative, self-controlling, and

receive more social support tend to manage conflicts more constructively and, therefore, are more likely to have better marital quality [19]. In a study conducted on married women, it was found the less social support in marital relationships and deep marital conflicts, the more menopausal symptoms occur as compared to those who have satisfying marital relationships. There was a positive and significant relationship between menopausal symptoms and social support. This means, menopausal symptoms decreased as social support increased [20]. The severity of symptoms that occur during menopause due to hormonal, anatomical and physiological changes, is directly caused by the decrease in the level of estrogen [18] during this period, which causes dryness in the vagina and genital area on known clinical conditions such as Vulvovaginal Atrophy (VVA). In addition to the genital and sexual complaints of VVA [21], and more vulnerability, it leads to 'Genitourinary Syndrome of Menopause (GSM), urinary infections [22] and the loss of part of the breast volume, and as a result, it leads to a decrease in sexual desire in the Female Sexual Dysfunction (FSD) [23]. The prevalence of sexual dysfunction was four times higher in menopausal women compared to those in the reproductive ages. About one-third of postmenopausal women have decreased libido and about two-third of them have experienced decreased libido at different stages of their lives [24]. Decreased sexual attractiveness, sexual desire and sexual activity in most women are common complaints in the post-menopausal period, which may be related to the decrease of Estrogen and Androgen hormones after menopause [18]. Nazarpour [25] found that only 46% of postmenopausal women have a good quality of sexual life. A decrease in sexual desire harms a person's self-esteem, which greatly affects the quality of life and mood of these women [26]. On average, menopausal women spend about a third of their lives in this period [27], and with the increase in life expectancy, they sometimes have sexual desires until the end of their lives and are active in this sense [26]. It is expected that by the year 2030, there will be 1.2 billion menopausal and postmenopausal women in the world [28]. As mentioned, cultural norms and psychological factors affect women's attitude towards themselves and the severity of menopause symptoms and, consequently, women's physical and psychological health. Therefore, it is important to study the effective factors in the experience of menopausal symptoms. The present study seeks to answer the question of whether intimacy, perceived support, and sexual performance in women differ with the intensity of low and high menopausal symptoms.

Method

This study used a causal-comparative research design. The population included all menopausal women who visited health centers in Ardabil during the first six months of 2022. Among these women, 150 responded to the research questionnaires. Women who scored one standard deviation above or below the mean ($M=23.39$, $SD=11.93$) on the menopausal symptom severity questionnaire were selected, resulting in 40 women in the

high symptom severity group and 40 in the low symptom severity group, chosen through convenience sampling. Accordingly, data has been collected from 40 participants with high severity and 40 participants with low severity of menopausal symptoms. Eventually, 80 questionnaires were filled out and their data were analyzed. Participants were enrolled into the study if they passed the inclusion/exclusion criteria. The inclusion criteria included: being in the age range of 45 to 80 years, having been diagnosed with menopause by a gynecologist, no physical or psychological illness, not being divorced or separated. The exclusion criteria included lack of consent to complete questionnaire and incomplete questionnaires. The participants were informed about all ethical considerations, such as the aims of the study, their right to withdraw at any time during the study, and the confidentiality of their data. A MANOVA test was performed to analyze the data using SPSS version 23 with a two-tailed 5% level of significance.

The questionnaires used in the research were as follows:

Couple Intimacy Questionnaire: Walker and Thompson's Couple Intimacy Questionnaire [28] is a 17-question tool designed to measure couple intimacy. Items were rated on a Likert scale 1=never to 7= forever. The scale scores can range from 17 to 119, higher scores indicating more intimacy. Walker and Thompson [28] reported the reliability of this test as 0.91-0.97 using Cronbach's alpha. Scale validity was also determined through content and face validity. In Iran, this scale was translated by Sanai [29] to determine content and form validity. At first the questionnaire was checked by 15 counseling professors and 15 couples and confirmed. The Cronbach's alpha was reported as 0.96 for the reliability of the questionnaire. In this study, the Cronbach's alpha coefficient was 0.90.

Multidimensional Perceived Social Support Questionnaire: This questionnaire was designed by Zimet et al. [30] including 12 statements to measure received support from three sources: family, friends, and important others in life on a 7-point Likert scale. Items rated 1=completely disagree to 7=completely agree. The scale scores can range from 12 to 84. Cheng and Chen [31] reported the Cronbach's alpha coefficient of the social support subscales of important others, family and friends as 0.99, 0.78 and 0.76 respectively. Also, In Salimi and Nikpour's [32] study, the reliability for the three dimensions of social support were 86%, 86% and 82%, respectively. In this study, the Cronbach's alpha coefficient for this scale was 0.89.

FSFI Women's Sexual Performance Questionnaire: This questionnaire was designed by Rosen et al. [33] including 19 items to measure women's sexual performance. The considered scores for the sub-scales of desire, sexual arousal, vaginal moisture, orgasm, pain and sexual satisfaction are between 1 and 5. One indicates that the person has not had sexual activity during the last four weeks. The scale scores can range from 19 to 95. The total score is obtained by adding six areas scores, which higher scores indicate a better sexual function. Rosen et al. [33] reported the test-retest reliability of the whole scale as

88% and for the subscales from 79% to 86%. In Heydari et al.'s research [34], the scale's reliability was reported as 70% or higher through questions' internal similarity coefficient for each fields and whole scale. In addition, there was a significant difference between the scores and each of its domains in both groups with and without sexual dysfunction, which indicates the tools' convergent validity. In this study, the Cronbach's alpha coefficient for this scale was 0.93.

Menopause Symptoms Severity Questionnaire (MSSI-38): This scale is an international standard scale for grading the severity of menopause symptoms in three domains: physical, mental, and urogenital. It has 11 questions on a 5-point Likert scale. It scores from (zero) to (4) severe. A higher score indicates more experienced symptoms. The reliability and validity of the questionnaire using Cronbach's alpha method and combined validity in most of the factors are acceptable and greater than 70%. The value of content validity index was 87% [35]. In this study, the Cronbach's alpha coefficient for this scale was 0.86.

Results

The sample of the present study included 150 women with the mean and standard deviation of age (56.8 ± 7.1). Among these women, those whose score was one standard deviation higher and lower than the average were selected as the group with high and low severity of menopausal symptoms. Among these, 20.66% of the women were in the age range of 45 to 50 years, 32.66% between 55 and 51 years, 23.33% between 56 and 60 years, 13.33% between 61 and 65, 6.66% between 66 and 70, 1.33% between 71 and 75 years, and 2% were between 76 and 80 years. All of the studied women were living with their husbands, and 13.33%, 22.66%, 22.66%, had one, two and three children respectively. Also, 41.33% had more than four children. In the following, the descriptive indices of the research variables of the two studied groups have been presented in Table 1.

In order to compare two groups of women with high and low menopausal symptoms in the studied variables (social support, intimacy and sexual function), multivariate analysis of variance was used. In order to use this test, its prerequisites, i.e. the variance-covariance matrix homogeneity test of dependent variables (M_{box}) and the variance homogeneity test of two groups in dependent variables (Leven test) must have been met. The result of the M_{box} test ($F=0.52$, $p>0.05$) shows that the homogeneity condition of the variance-covariance matrix is established and the Leven test indicates (social support, $F=0.06$; intimacy, $F=2$; sexual function, $F=2.50$; >0.05) the variance of the studied variables is homogeneous in groups. In addition, the result of Shapiro-Wilk test shows that the distribution of research variables is normal. According to the assumptions of the test, the use of the multivariate analysis of variance test is unimpeded. The results of multivariate analysis of variance have been presented in Table 2.

Table 1. Average and SD of Social Support, Intimacy and Sexual Function

Groups	Variables	Mean	SD	Shapiro-Wilk			
				statistic	P		
High symptoms	Social support	Total score	60.31	12.99	0.25	0.33	
		Important others	18.54	4.20	0.17	0.13	
		Family	20.72	5.45	0.24	0.25	
		Friends	21.05	3.34	0.32	0.10	
	Intimacy	67.25	20.59	0.35	0.12		
	Sexual function	Total score	31.66	23.42	0.43	0.18	
		Desire	4.03	4.45	0.38	0.17	
		Vaginal moisture	4.24	3.75	0.45	0.19	
		Sexual arousal	5.43	4.34	0.26	0.19	
		Orgasm	5.25	3.65	0.47	0.21	
		Pain	6.02	3.75	0.36	0.14	
		Marital satisfaction	6.69	3.38	0.51	0.29	
	Low symptoms	Social support	Total score	71.52	10.47	0.44	0.08
			Important others	25.46	3.17	0.38	0.11
Family			24.56	4.32	0.27	0.34	
Friends			21.50	2.98	0.22	0.17	
Intimacy		75.52	23.79	0.42	0.21		
Sexual function		Total score	62.29	20.46	0.31	0.11	
		Desire	11.03	2.21	0.17	0.06	
		Vaginal moisture	7.85	3.74	0.39	0.17	
		Sexual arousal	11.85	4.13	0.32	0.11	
		Orgasm	11.61	3.21	0.49	0.22	
		Pain	7.75	2.85	0.43	0.18	
		Marital satisfaction	12.20	4.32	0.47	0.20	

Table 2. Multivariate Analysis of Variance

Test Statistic	Value	F	Hypothesis df	Error df	P	Eta
Pillai's Trace	0.37	11.76	3	76	0.0001	0.37
Wilks' Lambda	0.62	11.76	3	76	0.0001	0.37
Hotelling's Trace	0.59	11.76	3	76	0.0001	0.37
Roy's Largest Root	0.59	11.76	3	76	0.0001	0.37

Table 3. Multivariate Variance Analysis, Social Support, Intimacy and Sexual Function in Women with Low and High Symptoms

Dependent Variable	SS	DF	MS	F	P	Eta
Social Support	1976.46	1	1976.46	14.13	0.0001	0.18
Intimacy	1075.90	1	1075.90	6.17	0.045	0.07
Sexual Function	14776.80	1	14776.80	30.47	0.0001	0.33

The Wilkes lambda index in Table 2 shows that the two studied groups had a significant difference in terms of at least one of the dependent variables ($p < 0.0001$). The eta squared values also show that 37% of the variance of the two groups' scores in the studied variables is due to group membership.

The results of the multivariate analysis of variance presented in Table 3 show that social support, intimacy and sexual performance have significant differences in the two studied groups ($p < 0.05$). By referring to the table of descriptive indicators in research variables in Table 1, it was found that women who experience fewer menopausal symptoms, compared to menopausal women with many symptoms, have more marital intimacy, social support and sexual functioning.

Discussion

The aim of this research was to compare intimacy, perceived social support and sexual performance in women with low and high menopausal symptoms. Multivariate analysis of variance test was used to analyze the data. The results of data analysis showed that two

groups with high and low menopausal symptom experiences were significantly different in terms of intimate relationships. In other words, the group that experienced less menopausal symptoms had better intimate relationships ($p < 0.05$). The findings were in line with previous studies [15, 16]. One of the major problems in menopausal women is the decrease in sexual health and intimacy. Research shows that menopausal women are dissatisfied with their sexual performance, and for this reason, they refrain from sex and reduce intimate relationships with their husbands, thus the more these women worry and fear the less, they experience intimacy [15, 16]. In middle-aged women, husbands help their wives overcome problems by providing emotional support. On the other hand, due to the increase in life expectancy, spouses spend more time together and emotional and intimate interactions affect their quality of life more. Another finding of this research was that two groups of menopausal women with high and low menopausal symptoms were significantly different in terms of perceived social support. In other words, the group with less severe menopausal symptoms had more

perceived social support. This finding is consistent with Zhang et al. [20] and Zhao et al. [36] research results. In explaining this finding, it can be stated that the majority of menopausal women are worried about the balance of their social life. These women feel aged, worry, are anxious, and are self-loathing. This depression increases during menopause, which may be caused by estrogen deficiency during this period [37]. Various studies show that women's negative attitude towards menopause determines their reaction to this phenomenon [38]. That is, after menopause, they experience a state of bewilderment, disbelief and restlessness due to a negative attitude, and 16% of postmenopausal women feel alone when faced with family problems. In societies where the value and respect of women after menopause increases, family members and especially husbands, support women, they experience less psychological damage compared to women who do not have such a position [39]. Different sexual performance in two groups with low and high menopausal symptoms was another finding of the present study. In other words, people with less menopausal symptoms had better sexual performance than the second group. This finding is in line with previous research results [37, 38]. Sexual performance is an important area of women's life that affects their physical and psychological health [22]. Decreased sexual performance is one of the important consequences of menopause, which has a negative effect on the cycle of sexual performance in women [18]. Studies show that menopause is associated with a lack of sexual arousal and a decrease in sexual satisfaction [37, 38], and that menopausal women suffer from vaginal pain due to a decrease in vaginal flexibility during intercourse [35]. This pain may cause menopausal women to avoid sex and reduce their self-confidence regarding their sexual ability, and this issue can harm the interactions of couples [38]. Some limitations of this study should be acknowledged. To begin with, this study was performed on women recruited from a specific geographical area, and any generalization of its results should be limited to individuals of similar characteristics. Another limitation was the lack of assessment of partner-related variables, any medication that may affect sexual function, or a hormonal profile, since some hormones play an important role in sexual function. Future studies should explore prospective designs for a larger and more diverse population, including women with a variety of health conditions, stratifying participants by age groups, and taking into account sexual distress, hormonal profile, partner-related variables and the use of any medication with the potential to affect sexual functions.

Conclusion

It appears that the findings of this study provide support for comparing intimacy, perceived social support and sexual performance in women with low and high menopausal symptoms. In this regard, two groups with high and low menopausal symptom experiences were significantly different in terms of intimate relationships. This means that the group that experienced less

menopausal symptoms had better intimate marital relationships.

Conflict of Interest

The authors declare no conflicts of interest.

Ethical Approval

The Ethics Committee of Payame Noor University approved this project.

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References

1. Dasgupta, D. and S. Ray, Is menopausal status related to women's attitudes toward menopause and aging? *Women & Health*, 2017. 57(3): 311-328. <https://doi.org/10.1080/03630242.2016.1160965>
2. Pertyńska-Marczewska, M. and T. Pertyński, Postmenopausal women in gynecological care. *Menopause Review/Przegląd Menopauzalny*, 2021. 20(2): 88-98. Doi: [10.5114/pm.2021.107103](https://doi.org/10.5114/pm.2021.107103)
3. Santoro, N., C. Roeca, B.A. Peters, and G. Neal-Perry, The menopause transition: signs, symptoms, and management options. *The Journal of Clinical Endocrinology & Metabolism*, 2021. 106(1): 1-15. doi: /10.1210/clinem/dgaa764
4. Javernick, J.A., A Novel Nonhormonal Treatment for Vasomotor Symptoms of Menopause. *Nursing for Women's Health*, 2024. 28(1): 80-84. doi: /10.1016/j.nwh.2023.11.005
5. Ngai, F.W., Relationships between menopausal symptoms, sense of coherence, coping strategies, and quality of life. *Menopause*, 2019. 26(7): 758-764. doi: [10.1097/GME.0000000000001299](https://doi.org/10.1097/GME.0000000000001299)
6. English, M., Stoykova, B., Slota, C., Doward, L., Siddiqui, E., Crawford, R., & Dibenedetti, D, Qualitative study: burden of menopause-associated vasomotor symptoms (VMS) and validation of PROMIS sleep disturbance and sleep-related impairment measures for assessment of VMS impact on sleep. *Journal of Patient-Reported Outcomes*, 2021. 5(1): 37-42. Doi: [10.1186/s41687-021-00322-0](https://doi.org/10.1186/s41687-021-00322-0).
7. Gava, G., Orsili, I., Alvisi, S., Mancini, I., Seracchioli, R., & Meriggiola, M. C., Cognition, mood and sleep in menopausal transition: the role of menopause hormone therapy. *Medicina*, 2019. 55(10): 1-17. doi: [10.3390/medicina55100668](https://doi.org/10.3390/medicina55100668).
8. Page, C.E., Soreth, B., Metcalf, C.A., Johnson, R. L., Korrinia, J., Sammel, M.D., Loughead, J., & Epperson, N. Natural vs. surgical postmenopause and psychological symptoms confound the effect of menopause on executive functioning domains of cognitive experience. *Maturitas*, 2023. 170: 64-73. doi: [10.1016/j.maturitas.2023.01.007](https://doi.org/10.1016/j.maturitas.2023.01.007).
9. Hickey, M., Moss, K. M., Brand, A., Wrede, C. D., Domchek, S.M., Meiser, B., Mishra, G. D., Joffe, H. What happens after menopause?(WHAM): a prospective controlled study of depression and anxiety up to 12 months after premenopausal risk-reducing bilateral salpingo-oophorectomy. *Gynecologic Oncology*, 2021. 161(2): 527-534. doi: [10.1016/j.ygyno.2021.02.001](https://doi.org/10.1016/j.ygyno.2021.02.001)
10. Lu, C.-b., et al., Musculoskeletal Pain during the Menopausal Transition: A Systematic Review and Meta- Analysis. *Neural plasticity*, 2020. 2020(1): p. 8842110.
11. Amoretti, M., et al., Production and detection of cold antihydrogen atoms. *Nature*, 2002. 419(6906): 456-459. <https://www.nature.com/articles/nature01096>
12. Li, R.-x., et al., Perimenopausal syndrome and mood disorders in perimenopause: prevalence, severity, relationships, and risk factors. *Medicine*, 2016. 95(32): e4466. doi: doi.org/10.1097/md.00000000000004466
13. Afridi, I, Psychological and social aspects of menopause. *Menopause: A Multidisciplinary Look at*, 2017. 49. DOI: [10.5772/intechopen.69078](https://doi.org/10.5772/intechopen.69078)
14. Zaman, N.I., S. Shakoor, and S. Yusuf, Menopausal symptoms: prediction of quality of marital relationship among couples. *Journal of Mind and Medical Sciences*, 2022. 9(1): 133-142. Doi:[10.22543/7674.91.P133142](https://doi.org/10.22543/7674.91.P133142)

15. Kling, J. M., Kelly, M., Rullo, J., Kapoor, E., Kuhle, C. L., Vegunta, S., Mara, K. C., & Faubion, S. S. Association between menopausal symptoms and relationship distress. *Maturitas*, 2019. 130: . 1-5. DOI: [10.1016/j.maturitas.2019.09.006](https://doi.org/10.1016/j.maturitas.2019.09.006)
16. Bülbül, T., S. Mucuk, M. Dolanbay, and I. Turhan, Do complaints related to menopause affect sexuality and marital adjustment? *Sexual and Relationship Therapy*, 2021. 36(4): p. 465-479. Doi : [10.1080/14681994.2020.1813886](https://doi.org/10.1080/14681994.2020.1813886)
17. Eagle, D.E., C.F. Hybels, and R.J. Proeschold-Bell, Perceived social support, received social support, and depression among clergy. *Journal of Social and Personal Relationships*, 2019. 36(7): 2055-2073. <https://doi.org/10.1177/0265407518776134>
18. Ng, S.S., Liu, T. W., Ho., L.Y., Chan, N. H., Wong, T. W., & Tsoh, J. Assessing the level of perceived social support among community-dwelling stroke survivors using the Multidimensional Scale of Perceived Social Support. *Scientific Reports*, 2022. 12(1): 1-10. DOI: [10.1038/s41598-022-23840-3](https://doi.org/10.1038/s41598-022-23840-3)
19. Delatorre, M.Z., A. Wagner, and L.M. Bedin, Dyadic relationships between personality, social support, conflict resolution, and marital quality. *Personal Relationships*, 2022. 29(1): 199-216. doi: [10.1111/per.12410](https://doi.org/10.1111/per.12410)
20. Zhang, Y., Zhao, X., Leonhart, R., Nadig, M., Hasenburg, A., Wirsching, M., & Fritzche, K. A cross-cultural comparison of climacteric symptoms, self-esteem, and perceived social support between Mosuo women and Han Chinese women. *Menopause*, 2016. 23(7): 784-791. doi: [10.1097/GME.0000000000000621](https://doi.org/10.1097/GME.0000000000000621).
21. Waetjen, L.E., et al., Factors associated with developing vaginal dryness symptoms in women transitioning through menopause: a longitudinal study. *Menopause*, 2018. 25(10): p. 1094-1104. Doi: [10.1097/GME.0000000000001130](https://doi.org/10.1097/GME.0000000000001130)
22. Angelou, K., et al., The genitourinary syndrome of menopause: an overview of the recent data. *Cureus*, 2020. 12(4). doi: [10.7759/cureus.7586](https://doi.org/10.7759/cureus.7586)
23. Simon, J.A., et al., Clarifying Vaginal Atrophy's Impact on Sex and Relationships (CLOSER) survey: emotional and physical impact of vaginal discomfort on North American postmenopausal women and their partners. *Menopause*, 2014. 21(2): 137-142. doi: [10.1097/GME.0b013e318295236f](https://doi.org/10.1097/GME.0b013e318295236f)
24. Pérez-Herrezuelo, I., et al., Female sexual function and its association with the severity of menopause-related symptoms. *International Journal of Environmental Research and Public Health*, 2020. 17(19): 7235-7243. doi: [10.3390/ijerph17197235](https://doi.org/10.3390/ijerph17197235)
25. Nazarpour, S., M. Simbar, F. Ramezani Tehrani, A., & Alavi Majd, H. Relationship between sexual function and quality of life in post-menopausal women. *Journal of Mazandaran University of Medical Sciences*, 2016. 26(143): 90-98. (in Persian). <http://jmums.mazums.ac.ir/article-1-8999-en.html>.
26. Jamali, S., Poornowrooz, S., Mosallanezhad, Z., and Alborzi, A. Correlation Between Sexual Satisfaction and Self-Esteem and Stress in Women of Reproductive Age. *Journal of Clinical & Diagnostic Research*, 2018. 12(10). 16-19. doi: [10.7860/JCDR/2018/37423.12152](https://doi.org/10.7860/JCDR/2018/37423.12152)
27. Lobo, R.A. and A. Gompel, Management of menopause: a view towards prevention. *The Lancet Diabetes & Endocrinology*, 2022. 10(6): 457-470. doi: [10.1016/S2213-8587\(21\)00269-2](https://doi.org/10.1016/S2213-8587(21)00269-2)
28. Walker, A. J. and Thompson, L. Intimacy and intergenerational aid and contact among mothers and daughters. *Journal of marriage and the family*, 1983. 45, 841-849. doi
29. Sanaie Zaker, M.B. *Family and marriage scales*. Tehran: Besat Publication.
30. Zimet, G.D., N.W. Dahlem, S.G. Zimet, and G.K. Farley, The multidimensional scale of perceived social support. *Journal of personality assessment*, 1988. 52(1): 30-41. doi: [10.1207/s15327752jpa5201_2](https://doi.org/10.1207/s15327752jpa5201_2)
31. Cheng, S.-T. and A.C. Chan, The multidimensional scale of perceived social support: dimensionality and age and gender differences in adolescents. *Personality and individual differences*, 2004. 37(7): 1359-1369. doi: [10.1016/j.paid.2004.01.006](https://doi.org/10.1016/j.paid.2004.01.006)
32. Salimi, A., Joukar, B., & Nikpour, R.. Internet and communication: Perceived social support and loneliness as antecedent variables. 2009.5(3): 83-102 [Persian]doi: [10.1155/2020/8842110](https://doi.org/10.1155/2020/8842110)
33. Rosen, C.B., J. Heiman, S. Leiblum, C. Meston, R. Shabsigh, D. Ferguson, R. D'Agostino, R, The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *Journal of sex & marital therapy*, 2000. 26(2): 191-208. doi: [10.1080/009262300278597](https://doi.org/10.1080/009262300278597)
34. Heydari, M. and S. Faghihzadeh, The female sexual function index (FSFI): validation of the Iranian version. *Payesh (Health Monitor)*, 2008. 7(3): 269-278.
35. Hoseinzadeh, F., H. Esmaily, J. Jamali, and F. Tara, Determining the reliability and validity of Menopause Symptoms Severity Inventory-38 Questionnaire. *The Iranian Journal of Obstetrics, Gynecology and Infertility*, 2018. 21(8):. 84-93. Doi: [10.22038/IJOGL.2018.11974](https://doi.org/10.22038/IJOGL.2018.11974)
36. Zhao, D., et al., Menopausal symptoms in different substages of perimenopause and their relationships with social support and resilience. *Menopause*, 2019. 26(3): 233-239. Doi: [10.1097/GME.0000000000001208](https://doi.org/10.1097/GME.0000000000001208).
37. Lascrain, M.B., et al., Improvement in depression with oestrogen treatment in women with schizophrenia. *Archives of women's mental health*, 2020. 23: 149-154. Doi: [10.1007/s00737-019-00959-3](https://doi.org/10.1007/s00737-019-00959-3).
38. Sydora, B.C., B. Graham, R.T. Oster, and S. Ross, Menopause experience in First Nations women and initiatives for menopause symptom awareness; a community-based participatory research approach. *BMC Women's Health*, 2021. 21(1): 179-190. Doi: [10.1186/s12905-021-01303-7](https://doi.org/10.1186/s12905-021-01303-7).
39. Zhang, Y., I. Schalo, C. Durand, and K.M. Standifer, Sex differences in nociceptin/orphanin FQ peptide receptor-mediated pain and anxiety symptoms in a preclinical model of post-traumatic stress disorder. *Frontiers in psychiatry*, 2019. 9: 731-739. doi: [10.3389/fpsy.2018.00731](https://doi.org/10.3389/fpsy.2018.00731)